

NCRPIS Seed Germination Testing Laboratory

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Mission

The mission of the NCRPIS Seed Germination Testing Laboratory is to monitor the seed viability of accessions stored at the station as well as to assess the initial viability of new seed. New seed may come from seed that has been increased at the station, brought back from collection trips, or sent to us by cooperators or seed banks. Seed viability is assessed using germination tests, tetrazolium staining, or embryo excision. The laboratory also assists station curators by germinating seed for field increase and conducting research to develop methods of germination of various taxa.



Germination Testing

- Test recently increased seed – ready seed for cold storage.
- Test distribution lots every 5 to 10 years – viability monitoring.
- Assist curators with germination of seeds for transplanting – germinations for seed increases use special blotter paper for easier removal of seedlings.

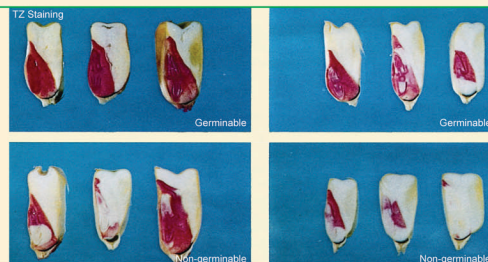
Special Needs

- Special germination testing – development of new methods to germinate species for which protocols are lacking or are difficult to use; e.g. using dark germination conditions for *Ulmus parifolia* (Chinese Elm).

- TZ staining – assessing seed viability of dormant seed.

(Photo at right from: Grabe, D.F. (ed.) 1970. Tetrazolium Testing Handbook for Agricultural Seeds. Contribution No. 29 to the Handbook on Seed Testing, AOSA.)

- Embryo excision – overcoming deep seed dormancy and 'rescuing' low quantity and valuable seed.



Data Management Tools

- Order creation software – retrieves accessions that are due for viability monitoring.
- Data entry software and bar code scanners – captures raw data and summarizes results with speed and reduced human error.
- Quality assurance and loading data to GRIN software – checks validity of test and loads data into the Germplasm Resources Information Network database.
- Order status software – detailed view of germination order status.



The Team

- Maria Erickson, a Certified Seed Analyst, is in charge of the NCRPIS Seed Germination Testing Laboratory. She is assisted by three Iowa State University students that work part time. Shown left to right: Sarah, Becky, Maria, and Ashlee.
- The germination team typically conducts over 4,600 germination tests each year.

